

## ABSTRACT OF THE DISCLOSURE

There is disclosed an auxiliary power unit (APU) for a transport vehicle powered by an internal combustion engine. An enclosure houses and supports the APU on the transport vehicle. An air-cooled engine within the enclosure directly drives an air-cooled, brushless generator. The generator provides direct, simultaneous AC and DC voltage outputs without requiring an inverter circuit or a converter circuit. Air duct systems within the enclosure separately convey cooling air into, through and out of the air-cooled engine and generator. The cooling air, drawn into the air duct systems by respective direct drive fan means integrated in the air-cooled engine and generator, exits through respective air outlet ducts from the enclosure.

In another embodiment, a system is disclosed comprising a compact, AC operated auxiliary heating and air conditioning unit operable in the cabin of a transport vehicle and powered by the APU described above. The system includes control means coupled to the auxiliary heating and air conditioning unit and the APU, and harness means for coupling the auxiliary heating and air conditioning unit, the APU, and the control means together.